



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/706,271

11/13/2003

Kenichiro Naito

1761.1051

5658

21171 7590 07/30/2007  
STAAS & HALSEY LLP  
SUITE 700  
1201 NEW YORK AVENUE, N.W.  
WASHINGTON, DC 20005

EXAMINER

KRAUSE, JUSTIN MITCHELL

ART UNIT

PAPER NUMBER

3682

MAIL DATE

DELIVERY MODE

07/30/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

**Office Action Summary**

Application No.

10/706,271

Applicant(s)

NAITO ET AL.

Examiner

Justin Krause

Art Unit

3682

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 18 July 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-3 and 5-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3,5-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 6/4/07
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on July 18, 2007 has been entered.

### ***Claim Rejections - 35 USC § 112***

Claims 1-3, 5, and 6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 1 and 6, the phrase, "the portion of the retainer body adjacent each pocket" and "the radial thickness of the retainer body not adjacent each pocket" lack antecedent basis.

### ***Claim Rejections - 35 USC § 102***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1 and 5, as best understood, are rejected under 35 U.S.C. 102(b) as being anticipated by Mutoh et al. (US Patent 6,068,408).

Mutoh discloses a ball retaining ring comprising:

- a ring-shaped or arcuate retainer body (see for example, figure 25 or abstract) having inner and outer peripheral surfaces opposite to each other; and
- a plurality of pockets defined in the retainer body so as to open at the inner and outer peripheral surfaces of the retainer body and spaced from each other in a direction circumferentially thereof for rollingly retaining corresponding balls therein; (abstract)
- wherein radial sides of an inner surface of each of the pockets that are opposite to each other in a radial direction of the ball retainer are defined as spherical ball bearing surfaces to which each ball contacts; (abstract, figures 5 and 6)
- wherein intermediate portions of the inner surface of each pocket with respect to the radial direction are defined as circumferential non-contact surface areas where the corresponding ball is prevented from contacting (8); and
- wherein substantially all edges of the ball bearing surfaces of the inner surface of each pocket, which contact the ball, are chamfered edges (abstract).
- wherein the portion of the retainer body adjacent each pocket (13) is formed as a thick walled portion of a thickness greater than a radial thickness of the retainer body not adjacent each pocket (12) (Fig 11).

Regarding claim 5, respective portions of one axial end of the retainer body where the corresponding pockets are defined are each provided with a pair of projections (fig 25, 12), the projections defining part of the inner surface of the pocket.

***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 2 and 6, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Mutou (hereafter referred to as '408) in view of Mutou et al (US Patent 6,074,099, hereafter referred to as '099 to avoid confusion).

Regarding claim 2, Mutou '408 discloses all of the claimed subject matter as described above but does not disclose intersecting oil reservoir grooves extending radially.

Mutou '099 teaches radially extending oil reservoir grooves (20) to provide a means for efficiently supplying lubricant to the clearances between the cage and the balls. (Col 4, lines 30-34).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Mutou '408 and add radially extending oil reservoir grooves, for the desired purpose of providing means for efficiently supplying lubricant to the clearances between the cage and balls as taught by Mutou '099.

Regarding independent claims 6 and 7, all of the claimed subject matter has been described above in the rejections of claims 1, 2, 4 and 5. Regarding the limitation in claim 7 that the radially disposed intersection lubricant reservoir groove is a "lubricant reservoir bottom groove", as best understood, the grooves are below the equator of the pocket, and therefore are considered on the "bottom" of the pocket.

Claims 3 and 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mutou '408 as applied to claim 1 above, further in view of Yamamoto et al (US 2003/0012461).

Mutou does not disclose a bottom of the inner surface of each pocket is formed with a bottom oil reservoir groove of a generally concave shape.

Yamamoto teaches a ball retainer with a bottom oil reservoir groove (11) of a generally concave shape, formed in between each opposing pocket surface portion (3a) of the ball retainer so that feeding of lubricant can be facilitated (Paragraph 0031).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Mutou to incorporate a bottom oil reservoir groove of a generally concave shape between each opposing pocket surface portion for the desired purpose of facilitating feeding of lubricant as taught by Yamamoto.

### ***Response to Arguments***

Applicant's arguments filed May 29, 2007 have been fully considered but they are not persuasive.

Applicant argues that the elastic pieces 13 of Mutoh '408 are not part of the main portion of the cage 7 and therefore does not satisfy the claimed limitation that the portion adjacent each pocket has a greater radial thickness than a portion of the retainer body not adjacent each pocket.

The examiner disagrees, finding that the language of the claim does not prohibit the examiner's interpretation. The claim requires the portion of the retainer body adjacent each pocket is formed of a thickness greater than the radial thickness of the portion of the retainer body adjacent each pocket is greater than the radial thickness of the portion of the retainer body not adjacent each pocket.

The elastic pieces constitute a portion of the retainer body that is not adjacent to each pocket, the elastic piece having a radial thickness that is less than a portion of the cage that is adjacent the pocket.

Without antecedent basis for the portions, it is difficult to locate the portions which applicant directs the limitation to. To the extent understood, a portion of the cage adjacent the pockets has a greater thickness than a portion of the cage which is not adjacent the pockets.

Applicant's arguments regarding claim 7 are moot in view of new grounds of rejection.

### ***Conclusion***


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Justin Krause whose telephone number is 571-272-3012. The examiner can normally be reached on Monday - Friday, 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Ridley can be reached on 571-272-6917. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3682

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JMK  
7/28/07  
JMK

  
Thomas R. Hannon  
Primary Examiner